January 1949

Test 435 Oliver DG

De[illegible]ment of Agricultural Engineering
Dates of test: November 8 to November 21, 1949
Manufacturer: THE OLIVER CORPORATION, CLEVELAND, OHIO
Manufacturer's rating: Not Rated.

The Experiment Station
University of Nebraska College of Agriculture
W. V. Lambert, Director, Lincoln, Nebraska

NEBRASKA TRACTOR TEST NO. 435

OLIVER DG

BELT HORSE POWER TESTS

H. P.	Crank shaft speed R.P.M.	Fuel Consumption: Gal. per hour	Fuel Consumption: H.P. hr. per gal.	Fuel Consumption: Lb. per H.P. hour	Water used Gal. per hour	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST B—100% MAXIMUM LOAD—TWO HOURS								
69.03	1300	6.722	10.27	0.591	0.00	155	59	28.900
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
66.58	1299	6.174	10.78	0.562	0.00	157	63	28.890
***TEST D—ONE HOUR**								
60.88	1298	5.897	10.32	0.588	0.00	158	66	28.900
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
60.96	1299	5.890	10.35	0.586	- --	158	67	-- ---
1.50	1427	2.394	0.63	9.680	- --	134	69	-- ---
31.47	1336	3.942	7.98	0.760	- --	141	68	-- ---
67.56	1294	6.311	10.71	0.567	- --	158	64	-- ---
16.32	1381	3.170	5.15	1.178	- --	136	64	-- ---
46.41	1315	4.857	9.56	0.635	- --	145	61	-- ---
37.37	1342	4.427	8.44	0.719	0.00	145	65	28.953

DRAWBAR HORSE POWER TESTS

H.P.	Draw bar pull Lbs.	Speed miles per hr.	Crank shaft speed R.P.M.	Slip of drive wheels %	Fuel Consumption: Gal. per hour	Fuel Consumption: Hp.-hr. per Gal.	Fuel Consumption: Lb. per Hp.-hr.	Water used Gal. per hr.	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST F—100% MAXIMUM LOAD— 3rd GEAR											
59.39	7363	3.03	1303	1.75	Not Recorded				150	48	28.950
TEST G—OPERATING MAXIMUM LOAD											
4.33	14582	1.40	1300	4.25	Not Recorded				152	56	28.950
56.14	9362	2.25	1301	2.67	" "				152	49	28.950
57.83	7188	3.02	1300	1.71	" "				146	45	28.950
52.40	3964	4.86	1301	0.96	" "				144	43	29.050
***TEST H—TEN HOURS— 3rd GEAR**											
45.52	5662	3.02	1300	1.56	5.720	7.98	0.761	0.02	145	41	29.192

* Formerly called RATED LOAD, see horsepower summary.

FUEL, OIL and TIME Fuel: Gasoline; octane 74 (octane rating taken from oil company's typical inspection data); weight per gallon 6.066 lb. Oil: SAE 20; to motor 2.440 gal; drained from motor 2.044 gal. Total time motor was operated 46 hours.

SPECIFICATIONS Type tracklayer; Serial No. 3E 282; Drive enclosed gear. Tread Width: Rear 61". Measured Length of Track 18.82 ft. Cleats: Type integral with shoes; No. per track 31; Size 2 1/4" x 20". Advertised speeds, mph: First 1.45: Second 2.28; Third 3.04; Fourth 4.85; Reverse 1.72 and 3.62. Belt Pulley: Diam 13"; Face 11"; RPM 958; Belt Speed 3260 fpm. Clutch: Make Long; Type double dry plate; Operated by foot pedal. Seat upholstered. Brakes: Make own; Type contracting band; Location differential shaft; Gear Reduction (brake drum to sprocket) 5.909:1; Operated by hand levers; Locked by latches. Steering hand levers controlling differential compound planetary gear system.

ENGINE Make Hercules; Serial No. 2015249; Type 6 cylinder vertical; Head L; Mounting crankshaft lengthwise; Lubrication pressure; Bore and Stroke 4 5/8" x 5 1/4"; Rated RPM 1300; Compression Ratio 5.78:1. Port Diameter Valves: Inlet 1 3/4"; Exhaust 1 3/4". Governor: Make Pierce; Type centrifugal, variable speed. Carburetor: Make Marvel-Schebler; Model TXS 399; Size 1 1/4". Starter Delco-Remy. Distributor and Coil Delco-Remy. Battery Williard, 12 volt. Air Cleaner: Make Vortox; Type oil washed wire screen. Oil Filter: Make Michiana; Type waste packed replaceable element. Cooling medium temperature control: Thermostat.

TOTAL WEIGHT AS TESTED (with Operator) 14,645 lbs.

REPAIRS AND ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with carburetor set for 100% maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G and H were made with an operating setting of the carburetor selected by the manufacturer of 96.9% of maximum belt horsepower.

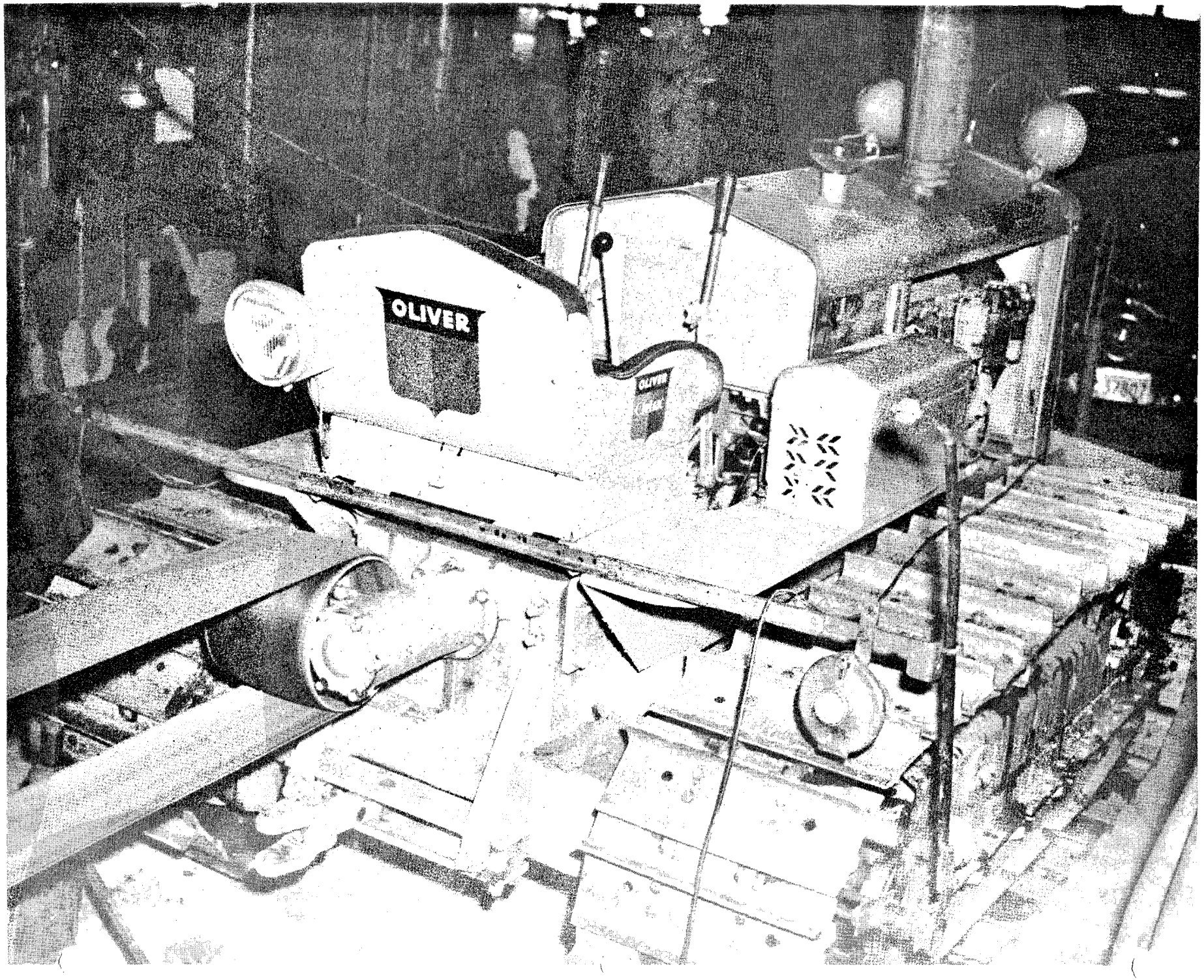
HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	60.67	71.40
2. Observed maximum horsepower (tests F & B)	59.39	69.03
3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings)	45.50	60.69

We, the undersigned, certify that this is a true and correct report of official tractor test No. 435.

L. F. Larsen
Engineer in Charge

C. W. Smith
F. D. Yung
L. W. Hurlbut
Board of Tractor Test Engineers


OLIVER